

Appln No. 10/706,855
Amdt date June 8, 2004

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1-13. (Canceled)

14. (New) A method of determining whether or not a wheel is locked, for use in an electric power steering control apparatus, wherein: it is determined whether an output value of a steering torque sensor for detecting steering torque is either equal to or larger than a predetermined threshold value; when the output value is either equal to or larger than the predetermined threshold value, it is determined whether the output value has continued to be either equal to or larger than the predetermined threshold value for more than a predetermined length of time; and when it is determined that the output value of the steering torque sensor has continued to be either equal to or larger than the predetermined threshold value for more than the predetermined length of time, then it is determined that a wheel is locked.

15. (New) A method for determining whether or not a wheel is locked as claimed in claim 14, wherein the determination as to whether the wheel is locked or not is made only when a motor of the steering control apparatus is in an energized state.

16. (New) A method for determining whether or not a wheel is locked as claimed in claim 14, wherein the determination as to whether the wheel is locked or not is made only when a motor of the steering control apparatus is in an energized state, and wherein the predetermined threshold value is varied according to the electric current value of the motor.

17. (New) A method for determining whether or not a wheel is locked as claimed in claim 16, wherein when electric current value of the motor is larger than a predetermined value, the predetermined threshold value is increased.

18. (New) A method for determining, in a series of cycles of processing, whether or not a wheel is locked, for use in an electric power steering control apparatus, wherein: when a motor of the steering control apparatus is in an energized state, it is determined whether a torque sensor output value detected in a current cycle of processing is larger than a torque sensor output value detected in a prior cycle of processing, and whether the torque sensor output value detected in the current cycle of processing has continued to be larger for more than a predetermined length of time; and when it is determined that the torque sensor output value detected in the current cycle of processing has continued to be larger than the torque sensor output value detected in the prior cycle of processing for more than the predetermined length of time, then it is determined that a wheel is locked.

19. (New) A method for determining whether or not a wheel is locked as claimed in claim 18, wherein the determination as

to whether the wheel is locked or not is made only when electric current value of the motor is larger than a predetermined value.

20. (New) A method for determining whether or not a wheel is locked as claimed in claim 18, wherein the determination as to whether the wheel is locked or not is made only when electric current value of the motor is larger than a predetermined value and, when it is determined that the wheel is locked, the motor is de-energized.

21. (New) A method for determining whether or not a wheel is locked as claimed in claim 18, wherein the determination as to whether the wheel is locked or not is made only when electric current value of the motor is larger than a predetermined value and, when it is determined that the wheel is locked, the electric current to the motor is progressively reduced.

22. (New) A method for determining whether or not a wheel is locked as claimed in claim 18, wherein the determination as to whether the wheel is locked or not is made only when electric current value of the motor is larger than a predetermined value and, when it is determined that the wheel is locked, energization of the motor is inhibited, while when it is not determined that the wheel is locked, energization of the motor is permitted.

23. (New) A method for determining whether or not a wheel is locked as claimed in claim 18, wherein the determination as to whether the wheel is locked or not is made only when electric current value of the motor is larger than a predetermined value

and, when it is determined that the wheel is locked, the electric current to the motor is progressively reduced, while when it is not determined that the wheel is locked, the electric current to the motor is progressively increased.

24. (New) A method for determining, in a series of cycles of processing, whether or not a wheel is locked, for use in an electric power steering control apparatus, wherein: when a motor of the power steering control is in an energized state, it is determined whether a torque sensor output value detected in a current cycle of processing is larger than a torque sensor output value detected in the prior cycle of processing, whether the difference between the two values is greater than a predetermined difference threshold, and whether the torque sensor output value detected in the current cycle of processing has continued to be larger for more than a predetermined length of time; and when it is determined that the torque sensor output value detected in the current cycle of processing has continued to be larger than the torque sensor output value detected in the prior cycle of processing for more than the predetermined length of time, with the difference between the two values being greater than the predetermined difference threshold, then it is determined that a wheel is locked.

25. (New) A method for determining whether or not a wheel is locked, as claimed in claim 24, wherein the difference threshold value is varied according to electric current value of the motor.

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26. (New) A method for determining whether or not a wheel is locked as claimed in claim 24, wherein when electric current value of the motor is larger than a predetermined value, the difference threshold value is increased.